

each of which has a fine grey seta; their whole surface densely and very minutely sculptured.

Legs elongate, yet not very slender; anterior tarsi not dilated. Palpi stout, penultimate articulation straight externally, slightly rounded inwardly.

From *T. latipennis*, Sharp, the thoracic angles at once differentiate it. It is most nearly allied to *T. oreobius*, but the broader form, evidently more transverse thorax, with more rounded anterior angles and more distinct lateral margins, distinguish it therefrom. The head also differs; in *T. oreobius* the frontal impressions are most obviously separated by the apparently raised central space, but in *T. coriarius* the space between the side and each fovea appears most distinct.

♀. Length $\frac{7}{8}$; breadth $\frac{3}{8}$ line.

Otira Gorge. One female, discovered by Mr. J. H. Lewis.

Drury, Auckland, N.Z.,
26th May, 1908.

L.—*On the Animals of Genera and Species of Mascarene Land-Mollusca belonging to the Family Zonitidæ, collected by Monsieur E. Dupont. By Lt.-Col. H. H. GODWIN-AUSTEN, F.R.S. &c.*

[Plates IX.—XI.]

ON commencing this paper I must convey my best thanks to Monsieur E. Dupont for collecting so carefully and sending me so much valuable material to examine and describe. I have also to thank Mr. John Ponsonby for supplying me with some species obtained in the first instance by the same conchologist. As the first consignment was received as far back as 1906, I have to regret the long delay in its publication. With regard to the animals of Mascarene land-shells I find not many have been described.

Messrs. Thomas Bland and W. G. Binney, in the 'Proceedings of the Academy of Natural Sciences of Philadelphia,' vol. xxvi. 1874, p. 47, describe the anatomy of some Mauritian land-shells belonging to the genus *Gonospira*, and of others with which I am more interested belonging to the Zonitidæ and placed in Gray's genus *Nanina*. "Such are *N. caldwelli*, Bs.; *N. rawsonis*, Barclay, = *semicerina*, Morelet; *N. argentea*, Rve.; *N. implicata*, Nevill; *N. styloidon*, Pfr., put in *Helix (Erepta)* by Von Martens."

Then follows a very important notice which I will quote in full :—“ Entirely different in the dentition is another species, *N. philyrina*, Morelet, though the species agrees in other respects with the above-named. The membrane is very broad, the teeth exceedingly numerous, arranged in oblique rows. The centrals, which I am confident of having seen, are small, narrow, high. The other teeth are the same in form to the edge of the membrane. They appear to have the usual aculeate form of the marginal teeth in *Nanina*, but instead of narrowing towards the cutting-point, they are broadly and obliquely truncated, reflected, and minutely denticulated. This lingual ribbon is also figured by Semper (Phil. Archip. pl. vi. f. 35), but his figures give more the impression of the usual *Nanina* marginals with denticulated sides and bifid points. The teeth are, however, so exceedingly numerous and small, it is very difficult to understand them.” This species is made the type of *Caldwellia* by H. Adams (*vide* P. Z. S. 1873, p. 209), and *cernica*, H. Adams, with *imperfecta*, Desh., probably belong to it, both Mauritian.

In this description we have distinct evidence of the sub-family Durgellinæ of India and Malayana extending to the Mauritius; the finely decussated and keeled shell *philyrina* is very unlike any species of the Indian genera of the sub-family, and will probably have to be put in a new genus. “ Elsewhere (Ann. N.Y. Lyc. N. H. x. 170) we have described the lingual of the following Mauritius species :—*Nanina inversicolor*, *leucostyla*, *rufizonata*, *militaris*. We have examined two genitalia of *N. inversicolor*. The oviduct is long, narrow, sac-like; the genital bladder is hardly smaller than its long wide duct; the penis is long, *extended into a flagellum*, receiving the vas deferens near its apex, beyond it having a bulb-like termination; the vas deferens is greatly swollen in its middle portion, and near the base of the oviduct has a long flagellate appendix.”

Still quoting Messrs. Bland and Binney concerning the species *inversicolor*, *leucostyla*, and *rufozonata* which they had received from Mr. Pike, the United States Consul at the Mauritius, it is stated that *inversicolor* and *militaris* were placed by Von Martens in Helicæa, genus *Helix*, the former in the section *Caracollus*, type of which is *H. caracolla* from Porto Rica, and the latter in *Stylodon*, type *unidentata* of the Seychelles; “ but both, as well as *rufozonata* and *leucostyla*, belong to the Vitrineæ, genus *Nanina*, of Von Martens’ classification. Indeed our figure of lingual dentition of *N. culias*, Benson (‘ American Journal of Conchology,’ vol. vii. p. 188, pl. xvii. fig. 6), well applies.”

The animal from which this radula was extracted was said to come from the foot of the Himalayas. I must point out here that an error in determination was made. It cannot be that of *N. calias*, which is a *Sophina* and type of that genus of Benson only found in Tenasserim. It has a radula of a very peculiar and aberrant type (*vide* 'Land and Freshwater Mollusca of India,' ii. p. 221, pl. cxv. figs. 5, 5 a, and pl. cxvi. fig. 3). The radula figured is that of a *Macrochlamys*, but unfortunately the species cannot now be determined. The description of the foot applies well to this Indian genus.

GENUS EREPTA, Albers.

Erepta, Albers, Die Heliceen, 1850, p. 109.

Original description:—"Testa imperforata, depressiuscula, solidula; anfractus 6, ultimus subangulatus; apertura lunaris, columella brevis, obliqua, dente valido truncata, peristoma simplex, margine basali subincrassato."

Type *Helix stylodon*, Pfr., Isle de France.

The animal of this species I have not as yet been able to obtain.

GENUS PACHYSTYLA, Mörch.

Pachystyla, Mörch, Cat. Yoldi, 1852.

Type *inversicolor*, Fér. No description.

I have not yet seen the animal of this species, but from the description of the genitalia given above by Messrs. Bland and Binney it appears to be of the type of those described in this paper.

In 1858 H. & A. Adams, in their 'Genera of Recent Mollusca,' p. 224, adopted *Pachystyla*, but neglecting *inversicolor*, take two other Mauritian shells as typical examples, viz. *mauritiana* and *ochroleuca*, Férus., which in shell-character are very unlike the Albers type. *Erepta* is made a subgenus of *Stylodonta*, p. 187.

In the 1860 edition of 'Die Heliceen,' Eduard von Martens included in *Erepta* the species *stylodon*, Pfr. (original type), *mauritiana*, Pfr., *barclayi*, Bs. (belonging to a different genus), *odontina*, Morelet, *mauritanella*, Morelet, *lightfooti*, Pfr., and *suffulta*, Bs.; the last two are the same as *odontina*, and *mauritanella* is the same as *mauritiana*.

Paul Fischer, Man. de Conchyliologie, 1887, p. 461, adopts *Pachystyla* as a section of *Ariophanta*, with subgenera *Cœlatura* and *Rotula*; these differ very widely from any species of the Ariophantinae and cannot be retained in it.

In this paper I select *Erepta* to represent these Mauritian

forms—*Pachystyla*, *Rotula*, &c. being subgenera based mostly upon shell-character alone.

Erepta leucostyla, Pfr. (Pl. IX. figs. A, A 1.)

= *mauritiana*, Pfr., = *mauritanella*, Morelet.

Locality. Mauritius (*E. Dupont*).

Animal. Grey throughout. Foot divided, the mucous pore large, extremity of foot truncate. The peripodial grooves present, but their parallelism is not very distinct, nor is the margin of the foot fringed, it is plain and concolorous.

Membrane of the branchial cavity finely mottled upon the margins of the veins, defining them well.

There are no shell-lobes; the right dorsal lobe is small, the left dorsal lobe in two parts.

Genitalia (fig. A). The shell being closely wound, the different organs are much elongated. In the penis the epiphallus (*ep.*) (*i. e.* the portion between the retractor muscle and vas deferens junction) is very long, and at this last point a peculiarly long cæcum calciferum or flagellum (*fl.*) is given off. There is no amatorial organ. The spermatheca (*sp.*) is extremely long, buried in the folds of the ovo-testis (*ov.*), and extending close up to the albumen-gland.

The jaw (fig. A 1) is moderately arched with a central projection.

The radula (fig. A 1) has the formula

$$68 . 1 . 17 . 1 . 17 . 1 . 68 \\ 86 . 1 . 86$$

The outermost lateral teeth, up to the number of about 30, are very minute, bicuspid, so are all the rest, the inner point slightly the longest. The admedian teeth and central tooth are of the usual form seen in *Macrochlamys* &c.; they are rather short, not elongate, on rather broad basal plates. The radula extracted was complete and had 118 rows.

Erepta rufozonata, H. Adams. (Pl. IX. fig. B.)

= *ochroleuca*, Férussac.

Locality. Mauritius (*E. Dupont*).

The shell of this species is much smaller than the preceding, but very similar in its general form, and quite distinct conchologically. The animal is dark grey, with two narrow parallel white streaks on dorsal side of the neck and

head. Branchial membrane much mottled with black. The animal in its characters is similar to that of *E. leucostyla*. The generative organs (fig. B) are precisely the same, the very long flagellum (*fl.*) included.

The jaw and radula are similar, the only difference lying in the formula, this being

$$15 + . 1 . 12 . 1 . 12 . 1 . 15 + \\ + 28 . 1 . 28 +$$

The outermost laterals were lost when removing the radula.

The species from the islands of the Mascarene group examined by Semper and described in his 'Reisen im Archipel der Philippinen,' p. 39, are *cœlatura*, Fér., and *rufa*, Lesson, both from Bourbon. The generative organs of these are figured on plate iii. figs. 22 & 23. In every respect they are like those of the Mauritian species now under review, with this exception, that the flagellum and spermatheca of the Bourbon species are both shorter; but this slight departure is not, I consider, sufficient to separate them generically. Semper placed them in Albers's genus *Rotula*, of which Albers made *detecta* the type—a Bourbon species: this I have not been able to obtain and see what the animal is like, but, in all probability, it will turn out to be like *cœlatura*, &c.* Semper also places in *Rotula* two other species from widely separated localities, viz.: the first, *R. massoni*, Behn, from the Andaman Islands, which, from a single specimen I have examined, appears to be more closely allied to *Macrochlamys*: the second is *R. campbelli*, Gray, from Philipp Island, near Melbourne; the generative organs of this species do not accord with those of *Rotula rufa*. I therefore come to the conclusion that the genus *Rotula* can only be considered a subgenus of *Erepta*, based on its shell-character, which is very distinctive and is well described by Albers: "Teste imperforata, lenticularis, late carinata, costulate striata; anfractibus $5\frac{1}{2}$, convexi, suturæ appressi, ultimus basi convexus; apertura securiformis; peristoma simplex, margine basali vix incrassato." *Erepta*, created many years previously, must be adopted for these shells from Bourbon and Mauritius. *Erepta* may possibly be found in the Comoro Islands as well, while it will be very interesting to discover if it extends to Madagascar or South Africa.

* This species *detecta* I have received, since these pages were in type, from Mr. Ponsonby. The generative organs in all respects are similar to those of *Erepta rufozonata*, and there is every indication of the spermatophore being like that figured in Pl. XI. figs. 2 & 3. There is no accessory organ, and the flagellum is not extremely long.

Among South Indian and Ceylon shells which I have examined there is nothing at all approaching the form of the generative organs of *E. leucostyla* and *E. rufozonata*; thus they form a well-marked genus of the Zonitidæ in this part of the world, and, when we know more of the species of this family in Africa, may possess subfamily rank. I may further point out that Semper gives a figure of the spermatophore of *E. (Rotula) rufa* (pl. iii. figs. 24, *a*, *b*): this shows a very well-marked form, which I hope to find in some of the preserved specimens sent home by Monsieur E. Dupont, to whom I must again tender my thanks for the assistance he has given me.

Subgenus CÆLATURA, Pfeiffer.

Erepta (Cœlatura) cœlatura, Fér. (Pl. IX. figs. D, D.)

Rotula cœlatura, Semper, Reis. im Archipel d. Philippinen, p. 39, pl. iii. figs. 22 *a*, *b*, pl. vii. fig. 1.

Nanina (Rhysota) cœlatura, Fér. Nev. Hand-list, i. p. 46 (1878).

Locality. Brulé, St. Denis, Bourbon (*E. Dupont*).

Animal. The left dorsal lobe is in three separate lappets.

The buccal mass is very globose in form.

The generative organs agree exactly with Semper's figure on plate iii.; the flagellum is not so thin and lengthened as in *E. leucostyla* and *E. rufozonata*.

The radula has the formula

82 . 2 . 22 . 1 . 22 . 2 . 82, or 106 . 1 . 106

The jaw: cutting-edge slightly concave with slight central projection.

Erepta (Cœlatura) rufa, Less. (Pl. IX. fig. C.)

Rotula rufa, Semper, Reis. im Archip. d. Philippinen, p. 39, pl. iii. figs. 23, *a*, *b*, 24, *a*, *b*; pl. vii. fig. 3.

Nanina (Macrochlamys or *Rotula* ?) *semifusca*, Deshayes.

Helix semifusca, Desh. Voy. Ind. pl. i. figs. 8-10.

Helix rufa auctorum (non Lesson).

Mr. Geoffrey Nevill, in 'Journ. Conchyliologie,' xxvi. 1878, p. 59, shows that *semifusca* is from the Mauritius, not from Pondichéry.

Locality. Mauritius (*E. Dupont*).

The example in the British Museum of *H. rufa*, Lesson, Mauritius (Voyage 'Rattlesnake,' 1847), is the same as a shell sent to me by Mr. Ponsonby. There is a single specimen of *H. scalpta* from Sir David Barclay, Isle of France; it is named on the original label *H. rufa*, and has the same

pitted sculpture of the shell, in Mr. Ponsonby's collection, but has strong rough lines of growth in addition.

The animal has no shell-lobes and therefore it cannot be mistaken for a *Macrochlamys*. The left dorsal lobe is in two parts, the smaller posterior well separated from the larger anterior. The visceral sac is closely mottled with black, with a tendency to form bands of that colour crossing it transversely. Towards the apical whorls black predominates, speckled with white. The branchial chamber is very ample and long. This description is taken from a specimen collected in the forests by Dupont.

The genitalia (fig. C) are of the same type as in the preceding species, with the same lengthened twisted flagellum. The spermatheca differs in being more ample and bulbous at the free end. There is also a peculiar dark pigmented globose expansion in the free oviduct, just below the point where the vas deferens is given off, which may be an ovithecæ. The generative organs agree well with Semper's figure of a Bourbon specimen.

The radula, like that of the preceding species, has a great number both of admedian and minute marginal teeth; these and the larger marginals being bicuspid, inner eusp the longest. The formula is: 58 . 2 . 19 . 1 . 19 . 2 . 58, or 79 . 1 . 79. The jaw is solid, cutting-edge concave with central projection.

Subgenus DUPONTIA, nov.

Type *E. perlucida*.

Shell umbilicated, very depressedly conoid, thin, glassy to the eye. Animal with a mucous gland overhung by a well-developed lobe. Foot divided.

The penis has a very long flagellum and an accessory organ in the shape of a small sac attached to the penis-sheath towards its distal end. Spermatheca long. Radula with about 100 teeth in the row: *the central and admedian teeth short and blunt with no side cusps*; the laterals evenly bicuspid.

The generative organs, radula, and shell differ from those of *Erepta rufozonata* &c.—the first, although of the same type, by the presence of the peculiar accessory gland; the second in the form of the central and admedian teeth without cusps.

A comparison with the African genus *Martensia* is interesting, because the genitalia are of the same type, as regards an accessory gland being also present (*vide* Proc. Malacological Soc. vol. i. pt. 6, July 1895, p. 282, pl. xix. fig. 1 d); the radula and shell, however, are quite different.

Erepta (Dupontia) perlucida, H. Adams.

(Pl. X. fig. 5, shell; Pl. XI. figs. 1-1 d, animal.)

Macrochlamys in nomenclature.

Locality. Mauritius (*E. Dupont*).

Shell very depressedly globose, of thin texture, umbilicated, base flat; sculpture quite smooth, glassy to the eye, except on the apical whorls, where longitudinal striation is very well seen; colour pale greenish ochre; spire very low, sides flat, apex rounded; suture very shallow; whorls 5, regularly increasing, very flattened, the last rounded on the periphery; aperture lunate, oblique; peristome very thin, columellar margin, oblique, not reflected and only slightly thickened.

Size: major diam. 9.25, alt. axis 3.5 mm.

Animal black; the wall of the branchial cavity is mottled black and white, the former predominating. The foot is divided and has a broad peripodial margin marked with black, and the sides of the foot are mottled with grey. The left shell-lobe is narrow and long, widest in the middle part, tapering away on both sides. The left dorsal lobe is in two distinct parts, contiguous to each other. The visceral sac is brown on the apical whorls.

The teeth of the radula are like those of *levis*. Formula:

39 . 1 . 8 . 1 . 8 . 1 . 39, or 48 . 1 . 48

The central and admedians have broad squarish plates, the teeth broad and blunt with no side cusps, narrowing, but still bluntly rounded, up to the 11th and 12th transition teeth. On the 13th tooth a small notch occurs very low down on the outside; this notch rises gradually upwards to the 19th tooth and thence to the margin all are evenly bicuspid. Jaw with a concave cutting-edge, centre part nearly straight.

Generative organs. No amatorial organ. The penis, commencing at the generative aperture, is cylindrical and elongate to where a small accessory sac is given off, the portion next above this tapers gradually to the retractor muscle; the epiphallus is short and is the seat of the spermatophore up to where the vas deferens unites with the penis, there is at this point a long thin flagellum. The spermatheca is a long narrow tube, terminating probably in a bulb; just above its junction with the free oviduct there is a large globose swelling in this duct, which narrows suddenly again towards the oviduct and where the vas deferens commences.

Erepta (Dupontia) levis, sp. n. (Pl. IX. figs. E-E 4.)

Locality. Mauritius (*E. Dupont*).

Shell (fig. E) very depressedly globose, narrowly umbilicated, shiny, base flat; colour pale sap-green; sculpture, microscopic longitudinal striation on the three first whorls, becoming smooth and indistinct on the remaining; spire very low; apex flatly rounded; suture slightly impressed; whorls 4 (? adult), regularly increasing, flatly convex; aperture lunate, oblique; peristome thin, columellar margin weak, not reflected, oblique.

Size: major diam. 7·25, alt. axis 2·75 mm.

This species differs from the preceding, to which it is very closely allied, in the less shallow suture and less flattened whorls.

The following probably belong to this subgenus: *virginea*, Morelet, has rough longitudinal sculpture, indistinctly decussate; *nitella*, Morelet, is quite smooth and glassy, more closely umbilicated and more closely wound than *levis*; *poweri*, H. Adams—*levis* is nearest to this, but in *poweri* the whorls are broader, flatter, and more openly wound.

The animal as seen through the shell is dark-coloured, finely mottled with white. The extremity of the foot (fig. E 1) has an overhanging lobe; the peripodial grooves are well marked, with the fringe-like edge below wide, and streaked with black. There are no shell-lobes, and the dorsal lobes are simple (fig. E 2).

In the generative organs (fig. E 3) a short thick retractor muscle is attached to the head of the penis-sheath; the epiphallus is short; the flagellum is long, slightly expanding towards the free end. The spermatheca is long and narrow, not bulbous. The radula formula is 26 . 4 . 8 . 1 . 8 . 4 . 26, or 38 . 1 . 38. The centre tooth and admedians are plain solid teeth with no side cusps and blunted points. On the 9th, 10th, 11th, and 12th a tooth on the outer side appears and rises towards the main tooth, the laterals becoming evenly bicuspid (fig. E 4).

The jaw is nearly straight in front, with a slight central projection.

Erepta (Ctenophila) caldwelli, Benson (Barclay MSS.).
(Pl. XI. fig. 2.)

Helix caldwelli, Bs. A. M. N. H., Feb. 1859, p. 98; Mon. Hel.;

Ancey (*Ctenophila*), Le Naturaliste, vol. ii. p. 69, Jan. 1882;

Nevill, *Nanina (Erepta?)*, Hand-list, i. p. 44 (= *H. paulus*, Morelet).

Erepta and *Patula* sp., in nomencl.

Helix vinsoni, Desh.

Helix setiliris, Bs.

Locality. Pouce Mountain, Mauritius (*E. Dupont*).

Animal black and white in the spirit-specimen, the white confined to the sole and margin of the foot below the peripodial grooves, and to the head and neck; the black on the head extends from the eye-tentacles along the upper side of the neck, with a narrow white line separating the two. The visceral sac is pale ochraceous, finely dotted with black, the dots closest next the mantle-edge.

Dorsal lobes small, the right black, the left in two parts, distant from each other; the anterior speckled, the posterior very small. Foot very distinctly divided. Lobe over mucous pore very small.

Genitalia. The male organ has at the junction of the vas deferens a long flagellum. The epiphallus is short. From the retractor muscle attachment the shaft is a long narrow tube, swelling near the generative orifice. Situated here, and seen by transmitted light, is what appears to be a small cæcum, the free end pointing towards the aperture. The spermatheca is a very long strong tube ending in a thin-walled bulbous sac. This contained a spermatophore in a perfect state of the simplest construction, consisting of an extremely long whip-like flume terminating in an elongate capsule; the flume has no spines, but at one part the edge is serrated. This is very interesting, and can be compared with the figure of this organ by Prof. C. Semper, pl. iii. fig. 24, of his *Rotula rufa*, from Bourbon.

Erepta odontina, Morelet. (Pl. XI. fig. 3.)

Rev. et Mag. (1851).

= *Helix suffulta*, Bs. A. M. N. II. ser. 2, xi. p. 34 (1853); Nevill, *Nanina* (*Erepta*), Hand-list, i. p. 44 (1878).

Helix lightfooti, Pfr. P. Z. S. 1851, p. 150. Australia?

Locality. Pouce Mountain, Mauritius (*E. Dupont*).

Animal colourless in spirit, only the eye-muscle showing black, and some black speckling on the mantle where reflected over the edge of the peristome. Foot divided. Mucous pore with a lobe above it. Peripodial grooves distinct. The generative organs (fig. 3) are quite of the type of *Dupontia perlucida*. The penis-sheath is elongate, cylindrical, with a blunt protuberance on the side, continuing as a diminished tube to the retractor muscle. The epiphallus is short and at the junction of the vas deferens there is a very long thin flagellum. The spermatheca is a very strong, thickened, long tube, with a thin bulbous termination; it contained a perfect spermatophore. An elongate capsule

was attached to a very long, finely pointed, and narrow flume quite simple and spineless.

Radula: form of teeth as in *E. leucostyla*; formula:

25 . 1 . 10 . 1 . 10 . 1 . 25, or 36 . 1 . 36.

Jaw slightly curved, with a central projection.

The internal anatomy of these eight species shows a most interesting similarity of type, while their shells differ in a remarkable way. We have them with large solid shells of turbate or depressedly turbate shape, some small, thin, smooth, and depressedly globose, others orbiculate depressed, with strong ribbing; this assemblage has consequently been placed in different genera from the conchologist's point of view, which need not be altered. Long isolation on oceanic islands of small area, under conditions only varying with altitude, has evidently led to the greatest variation taking place in one direction only, viz. the shell. Association with all other genera being cut off, changes in the animal could only be specific and slight.

I consider this Mascarene group of land-mollusca is well worthy of subfamily distinction, for which I propose the name "Ereptinæ." Similar anatomical detail has not been met with by me in any of the Indian genera, nor as yet in any South African I have examined. The distinction bears out the extremely isolated position of these islands and their great antiquity—lands where such a family as the Dididæ was developed; where so many rare and now extinct genera lived, such as the flightless rails *Aphanapteryx* of Mauritius and *Erythromachus* of Rodriguez, with *Lophopsittacus* (a large parrot) and a *Nycticorax* (a night heron) respectively; where the reptilia and plants all point to extremely long isolation following on a once far more extended range and connection with lands of distant geological age.

Subfamily EREPTINÆ.

Shells of very varied form; animal with no shell-lobes. Foot divided, with mucous pore, peripodial grooves, and border. Genitalia: no amatorial organ; penis with lengthened flagellum and long spermatheca; the spermatophore without spines; a capsule attached to a long tapering flume. Radula and jaw as in the family Zonitidæ.

In a consignment of Mauritian shells collected by Monsieur E. Dupont and sent to me by Mr. John Pousonby

are two minute species under the names of *Microcystis barclayi* and *M. perlucida*: the former I first compared with three examples in the Natural History Museum; these were originally in Henry Adams's collection and we may therefore consider them typical. I was afterwards able to see the typical specimens in the Benson collection at Cambridge, through the kindness of Prof. S. F. Harmer. There are many examples of *barclayi*, Bs., all from the Mauritius—about nine are labelled *Trochomorpha*, two *Erepta*, one no genus. Most of them are not fully grown and many are imperfect, particularly at the peristome—no doubt due to the method adopted by McAndrew of sticking the shells on cards, which lie among other cards. None of the specimens come up to the size recorded by Benson, viz. 4 mm., the largest being 3.25 mm. The sculpture of *barclayi* consists of irregular fine close ribbing, showing stronger in some specimens than in others and extending to the protoconch. I give figures of one of the Cambridge Museum shells (Pl. X. figs. 1-1 b), as I do not think the species has ever been figured before; its principal character is the subangulate periphery: this specimen was 3 mm. in major diameter. It is difficult to understand why Von Martens, in the 1860 edition of 'Die Heliceen,' included a small shell like *barclayi* in *Erepta*—a genus Albers created in 1850—with type *stylodon*, Pfr., a large solid shell. The sculpture of the other shell found by M. Dupont is quite different from *barclayi* and from all the other minute helices in the B.M. collection examined by Mr. Edgar Smith and myself.

As *barclayi* cannot be retained in the genus *Erepta*, I place it with other similar small shells from these islands in a new genus (*Lousia*) of the Zonitidæ (see Pl. X. figs. 1-1 b).

Genus LOUSIA.

Shell small, subpyramidal or globose, last whorl keeled or rounded on the periphery, with regular transverse distant fine ribbing. Animal with a mucous gland and peripodial groove. Ovoviviparous in habit. The radula with about 70 teeth in a row; central teeth on broad plates, few in number, all tricuspid; marginals also tricuspid. Jaw oxygnathous.

Lousia insularis, sp. n. (Pl. X. figs. 2-2 e, Type.)

Locality. Mauritius (*E. Dupont*).

Shell depressedly globose; sculpture fine somewhat regular ribbing, which on the last whorl extends to the periphery and basal side; first whorl smooth; colour ochraceous; spire low, apex blunt; suture well impressed;

whorls $4\frac{1}{2}$, rounded on the periphery, convex above; aperture narrowly lunate; peristome thin, columellar margin sub-oblique.

Size: major diam. 3, alt. axis 1.4 mm.

This shell is not nearly so keeled as that of *L. barclayi*, although having fewer whorls and being much smaller.

The animal is very small, yet the specimens are so well preserved, a good deal of its form could be made out. It is pale throughout, the eye-tentacles being the only dark parts; these rise rather far back on the neck and are club-shaped (fig. 2 a). The foot is divided and there is a mucous pore with a small process above it more or less pointed (fig. 2 c). The mantle-edge overlaps the edge of the peristome (fig. 2 a). The right dorsal lobe is triangular, the left longer and narrower. The animal is ovoviviparous (fig. 2 b), with often four immature shells in the oviduct, the two most mature showing the ribbing of the shell. I could not make out the rest of the genitalia.

The jaw (fig. 2 d) has a very small central projection. The teeth of the radula (fig. 2 e) have the formula 30 . 4 . 1 . 4 . 30, or 34 . 1 . 34. The central tooth and the four admedian teeth are on very broad quadrate plates, square above, all tricuspid, the side cusps rather low down; there is a single intermediate tooth with a single cusp on the outside, succeeded by an evenly bicuspid series; at the 18th tooth the laterals become tricuspid.

In several important characters of its anatomy this species is similar to *Philonesia* of Sykes, described by me in 'Fauna Hawaiiensis,' vol. ii. 1900 (Mollusca). The teeth of the radula are of the same type, with the exception that the admedian teeth are tricuspid in the Mauritian species, but have a single cusp on the outside in *Philonesia baldwini*, Ancy.

Lousia duponti, G.-A. (Pl. X. figs. 3-3 c.)

Locality. Island of Fourneaux, S.W. of Mauritius (*Dupont*), 15. v. 07.

Shell globosely turbinate, last whorl rounded below; sculpture regular, distant, engraved spiral striation on lower side and all the whorls crossed by fine lines of growth; colour pale chestnut; spire conic, sides flat, apex rounded; suture impressed; whorls 4, regularly increasing, convex; aperture semilunate, oblique; peristome very thin, columellar margin scarcely thickened, not reflected, oblique.

Size: major diam. 2.5, alt. axis 1.4 mm.

Animal (Pl. X. fig. 3*b*) ovoviviparous; one shell contained three immature ones. Sole of foot narrow elongate, with a peripodial margin, probably a mucous gland. It is somewhat similar in its form to *L. insularis*, but I failed to see the mucous gland; it no doubt possesses that organ, the radula and eye-tentacles being of similar type.

The radula (fig. 3*c*) has the formula 25 . 8 . 1 . 8 . 25, or 33 . 1 . 33.

The central tooth and admedians are similar on broad plates, with a long central point rising well above basal cusps on either side; the transition-teeth have one outside cusp, and the laterals are curved and tricuspid. The jaw (fig. 3*c*) is high, rounded above, and with a central projection on the cutting-edge, which is slightly concave.

Kaliella fourneauensis, sp. n. (Pl. X. figs. 4, 4*a*.)

Locality. Island of Fourneaux, S.W. of Mauritius (*Dupont*), 15. v. 07.

Shell (fig. 4) pyramidal, very narrowly perforate; sculpture irregular transverse striation, finer and more regular on the apical whorls; colour pale ashy; spire nearly as high as diameter of base; suture shallow, marked by a fine lirate line; whorls 6, slightly convex, the last carinate and lirate; aperture semicircular; peristome thin, columellar margin slightly reflected.

Size: major diam. 3.25, alt. axis 3.0 mm. Largest example.

The formula of radula (fig. 4*a*) is 25 . 7 . 1 . 7 . 25, or 32 . 1 . 32. The central and admedian teeth are alike, on broad plates, tricuspid, basal cusps on both sides of the main point; the marginal teeth also tricuspid, but more evenly so.

EXPLANATION OF THE PLATES.

PLATE IX.

- Fig. A. *Erepta leucostyla*, genitalia, part of, $\times 2.25$.
 Fig. A 1. Ditto, jaw, $\times 9.25$, and teeth of the radula, $\times 277$.
 Fig. B. *Erepta rufozonata*, part of genitalia, $\times 2.25$.
 Fig. C. *Erepta (Caelatura) rufa*, part of genitalia, $\times 2.25$.
 Figs. D, D. *Erepta (Caelatura) calatura*, part of genitalia, $\times 2.25$.
 (The male organ in upper figure is shown detached.)
 Fig. E. *Erepta (Dupontia) levis*, sp. n., shell, $\times 3.4$.
 Fig. E 1. Ditto, extremity of foot, with mantle-edge and part of the visceral sac, $\times 6$.
 Fig. E 2. Ditto, right and left dorsal lobes, $\times 6$.
 Fig. E 3. Ditto, genitalia, part of, $\times 6$.
 Fig. E 4. Ditto, jaw, $\times 22.5$; teeth of radula, $\times 277$.

PLATE X.

- Fig. 1.* *Louisia barclayi*, Bs., typical specimen from the Benson collection, Cambridge, $\times 5$.
Fig. 1 a. Ditto, apical whorls, $\times 58$.
Fig. 1 b. Ditto, sculpture on the last whorl, $\times 58$.
Fig. 2. *Louisia insularis*, sp. n., shell, $\times 8$.
Fig. 2 a. Ditto, animal from right side, $\times 9$.
Fig. 2 b. Ditto, showing sole of foot with shell, and young shells within it, $\times 9$.
Fig. 2 c. Ditto, extremity of foot, with mucous pore, $\times 9$.
Fig. 2 d. Ditto, jaw, $\times 43$.
Fig. 2 e. Ditto, teeth of radula, $\times 300$.
Fig. 3. *Louisia duponti*, sp. n., shell, $\times 12$.
Fig. 3 a. Ditto, sculpture on last whorl, $\times 58$.
Fig. 3 b. Ditto, shell with animal, one showing the immature shells in the oviduct, $\times 6$.
Fig. 3 c. Ditto, jaw, $\times 43$; teeth of radula, $\times 300$.
Fig. 4. *Kaliella fourneauensis*, sp. n., $\times 8$.
Fig. 4 a. Ditto, teeth of the radula, $\times 300$.
Fig. 5. *Erepta (Dupontia) perlucida*, shell, $\times 3.4$.

PLATE XI.

- Fig. 1.* *Erepta (Dupontia) perlucida*, mantle-zone, left side, showing shell- and dorsal lobes, $\times 6.2$.
Fig. 1 a. Ditto, extremity of foot, $\times 4$.
Fig. 1 b. Ditto, jaw, $\times 15$.
Fig. 1 c. Ditto, teeth of the radula, $\times 184$.
Fig. 1 d. Ditto, genitalia, $\times 4$.
Fig. 2. *Erepta (Ctenophila) caldwelli*, genitalia, $\times 6$.
Fig. 3. *Erepta odontina*, genitalia, $\times 4$.

ant.l.d.l., anterior left dorsal lobe; *post.l.d.l.*, posterior left dorsal lobe; *r.d.l.*, right dorsal lobe; *ep.*, epiphallus; *fl.*, flagellum; *gen.ap.*, generative aperture; *ov.*, oviduct; *p.*, penis; *pr.*, prostate; *sp.*, spermatheca; *sper.*, spermatophore; *v.d.*, vas deferens; *v.s.*, visceral sac; *r.m.p.*, retractor muscle of penis.

II.—*Descriptions of some Rhynchota from Ruwenzori.*

By W. L. DISTANT.

THESE descriptions refer to the collections made by the recent British Museum Expedition to Ruwenzori in Central Africa. The full enumeration of the species will subsequently appear in the 'Transactions of the Zoological Society of London.' I have previously described in these pages some new species collected by Mr. Scott Elliot during his journey to the same locality. The types are in the British Museum.